

Assessment of the euro payment system in Hong Kong

by the Banking Development Department

Robust and effective clearing and settlement systems are essential to the competitiveness of the financial sector and for consolidating Hong Kong's position as an international financial centre. The HKMA pays particular attention to these systems for the safe and efficient transfer of funds and securities within Hong Kong and between Hong Kong and other financial centres.

This report assesses Euro CHATS, one of the major clearing and settlement systems in Hong Kong, against the 10 Core Principles for Systemically Important Payment Systems issued by the Bank for International Settlements. Euro CHATS has achieved a high degree of compliance by observing six principles and broadly observing three others. One principle is not applicable to the system.

Introduction

The Clearing and Settlement Systems Ordinance (CSSO) of Hong Kong, which aims to promote the safety and efficiency of clearing and settlement systems, empowers the Monetary Authority (MA) to designate, and to subject to his oversight, such systems whose proper functioning is material to the monetary or financial stability of Hong Kong or to the functioning of Hong Kong as an international financial centre. The MA has designated four local systems under the Ordinance: the HKD CHATS, USD CHATS, Euro CHATS and the Central Moneymarkets Unit (CMU), and one international system: the Continuous Linked Settlement (CLS) system¹. The MA exercises oversight of the four local systems. Oversight of the CLS system is done through a co-operative arrangement led by the Federal Reserve system because the CLS Bank is located in the US. The Federal Reserve co-operates with the central

banks (including the MA) of all CLS-eligible currencies². Although Euro CHATS is subject to direct oversight by the MA, oversight information of this system is shared with the European Central Bank under the Lamfalussy Principles for co-operative oversight.

In addition to compliance with the requirements stipulated under the CSSO, Euro CHATS and other designated systems are encouraged to comply with internationally recognised standards for payment and settlement systems. The main objective of this exercise is to assess the degree of compliance of Euro CHATS with the Core Principles for Systemically Important Payment Systems (the Core Principles)³ issued by the Bank for International Settlements (BIS). Where appropriate, the relevant parties are recommended to consider enhancements to Euro CHATS with a view to ensuring the system is in line with the international recognised standards.

¹ The HKD CHATS is responsible for clearing and settlement of all the Hong Kong dollar interbank payments on an RTGS basis, and it also processes smaller retail items, including cheques, autopay transactions, low-value bulk electronic payment items and low-value automatic teller machine transfers. The Euro CHATS and USD CHATS are systems to clear and settle US dollar and euro transactions in Hong Kong during Asian business hours. The CMU is a debt securities clearing and

settlement system. The CLS system is operated by the CLS Bank, a special purpose bank based in New York, offering simultaneous settlement of both legs of payment obligations of a foreign exchange transaction.

² The Hong Kong dollar is a CLS-eligible currency.

³ Information regarding the Core Principles can be found at <http://www.bis.org/publ/cpss43.htm>.

Euro CHATS

Euro CHATS was launched on 28 April 2003. Its key features include interbank real-time gross settlement (RTGS)⁴, payment-versus-payment settlement (PvP)⁵ for euro/US dollar and euro/Hong Kong dollar foreign exchange transactions, and delivery-versus-payment (DvP)⁶ settlement for euro denominated debt securities through a link with the debt securities settlement system in Hong Kong – the CMU.

The system's settlement institution is the Standard Chartered Bank (HK) Limited. The clearing functions are performed by the Hong Kong Interbank Clearing Limited (HKICL) as the system operator. Both local and overseas institutions are eligible to participate directly or indirectly in the system. At the end of 2006, there were 25 direct and 22 indirect participants. In 2006, the system settled about 25,000 transactions, involving a total value of over €260 billion.

Assessment Methodology

In this report, Euro CHATS is assessed against each of the 10 Core Principles. In addition to the Core Principles, the assessment also makes reference to the "Guidance Note for Assessing the Observance of Core Principles for Systemically Important Payment Systems" issued by the International Monetary Fund and the World Bank, and the oversight experience accumulated by the Hong Kong Monetary Authority (HKMA), the office of the MA. In forming the assessment, information and views regarding Euro CHATS were sought from the settlement institution and the system operator. A summary of the assessment of Euro CHATS against each of the 10 Core Principles is provided below.

Main Findings

Core Principle I

The system should have a well-founded legal basis under all relevant jurisdictions.

The issues assessed in the context of this Core Principle included the identification of the legal infrastructure of the system, adequacy and completeness of the legal framework; the enforceability of the relevant rules and procedures in determining the rights and obligations arising from participation in the system; and the certainty of irrevocability and finality of payment instructions.

The relevant laws in Hong Kong provide a comprehensive and well-founded legal framework for the establishment and operation of Euro CHATS.

The MA exercises authority delegated by the Financial Secretary of the Hong Kong Special Administrative Region to maintain monetary and banking stability in Hong Kong. One of the mandates of the MA is to enhance the efficiency, integrity and development of the financial system, including payment and settlement systems. To promote the efficient real-time settlement of euro transactions and provide PvP settlement to eliminate the settlement risk within the Hong Kong time zone, the HKMA acts as facilitator in developing Euro CHATS⁷.

The HKMA adopted a private sector approach in establishing the system. It appointed a commercial bank, the Standard Chartered Bank (HK) Limited (SCB), as the settlement institution for a franchise period of five years from 1 March 2003. In its capacity as the settlement institution, SCB appointed

⁴ RTGS refers to the continuous (real-time) settlement of funds or securities transfers individually order-by-order (without netting).

⁵ PvP is a mechanism in a foreign exchange settlement system which ensures that a final transfer of one currency occurs if, and only if, a final transfer of the other currency or currencies takes place.

⁶ DvP is a link between a securities transfer system and a funds transfer system that ensures delivery occurs if, and only if, payment occurs.

⁷ The HKMA plays two roles in Euro CHATS: as a facilitator and as an overseer. The two different roles are managed by two separate teams within the HKMA to avoid conflict of interest.

the HKICL as the system operator to perform clearing services for Euro CHATS. The terms and conditions of the parties and their roles and responsibilities are governed by relevant legal documents.

Euro CHATS adopts a two-tier membership structure. A participant can join as either direct participant or Indirect CHATS User. Each direct participant is required to open a euro settlement account with the settlement institution to clear and settle its euro payments. An Indirect CHATS User is not required to open a euro settlement account with the settlement institution and all its euro payments will be processed through a designated direct participant. The rights and obligations of each direct participant, the settlement institution and the system operator are specified in the relevant membership agreements.

The rules and procedures for Euro CHATS, the Euro Clearing House Rules (the Rules), provide the legal basis for the operation of the system.

The Rules are a contract between the settlement institution, the system operator, and the direct participants. They specify that the system operator is entitled to issue Operating Procedures (the Procedures) to specify the detailed procedures for the system's operation. The Procedures form part of the Rules, and legally bind the parties. The Rules also specify that the settlement institution, system operator and direct participants shall comply with the relevant responsibilities and obligations under the CSSO and regulations made by the MA as the system's overseer under the Ordinance.

The legal arrangements which specify the timing of irrevocability and the final settlement are solid. The MA issued a certificate of finality to the system after Euro CHATS was designated under the CSSO in November 2004. The CSSO provides settlement finality for transfer orders effected through Euro CHATS by protecting the transfer orders from being reversed or made void under insolvency laws or any other laws of Hong Kong. Notwithstanding any law to the contrary, a court in Hong Kong shall

not recognize or give effect to an order of a court exercising jurisdiction under the law of insolvency in a place outside Hong Kong or an act of a person appointed in a place outside Hong Kong to perform a function under the law of insolvency there, in so far as the making of the order or doing of the act would be prohibited under the CSSO for a court in Hong Kong or a relevant insolvency office-holder in Hong Kong. In other words, Hong Kong courts will not recognise or give effect to an order of a foreign court, or an act of a foreign insolvency office-holder relating to the bankruptcy, winding up or insolvency of a person where a court or relevant insolvency office-holder in Hong Kong is prohibited from making such order or doing such act. Therefore, all transactions settled through Euro CHATS are irrevocable and final, and have statutory backing for settlement finality. The Rules state the time and conditions of irrevocability and the finality of a transfer order. No court proceedings have been taken since the inception of Euro CHATS. The arrangements for intra-day overdraft facilities and the use of collaterals for intra-day Repo transactions between the settlement institution and a direct participant are done through legally enforceable agreements between the settlement institution and the direct participants.

The assessment concludes that Euro CHATS observes Core Principle I.

Core Principle II

The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.

The assessment of this Core Principle concentrated on the availability and clarity of the system's rules and procedures, and whether or not they specify clearly and adequately the rights and obligations of the participants; as well as the measures and the discretionary powers that may have to be taken in special situations or for handling abnormal situations.

The rules and procedures for Euro CHATS set out clearly and comprehensively the rights and obligations of the involved parties for the management and containment of the financial risks that may be incurred by participating in the system. The legal basis of the operation of

Euro CHATS, the roles and responsibilities among the settlement institution, the system operator and the participants both in normal and abnormal circumstances, the system functions and the operating schedules of the system, are clearly specified in the Rules and the Procedures. To facilitate liquidity management in the system, the settlement institution agreed with each direct participant the terms and conditions for the provision of an interest-free intra-day overdraft facility by the settlement institution based on commercial terms. A Repo facility is also available in Euro CHATS subject to the signing of the Master Sale and Repurchase Agreement between the settlement institution and the direct participant concerned.

The measures for handling special events and the discretionary power to take action during exceptional circumstances are available and clearly specified in the documents. The contingency procedures and backup arrangements of Euro CHATS, the approving authority for triggering contingency measures and the use of discretionary power during exceptional circumstances are specified in the Rules and Procedures.

The financial risks that may occur through participation in Euro CHATS are explained to the system participants in good time. Participants are also made aware of the potential risks that may be involved in a commercial bank being the settlement institution. The Rules and the Procedures are available to direct participants and on the system operator's website. The documents are updated from time to time to cater for new system features. Approval from the relevant parties is required before making changes to the Rules and the Procedures. When needed, the settlement institution and the system operator may issue circulars and conduct

briefings for the participants to make them aware of updated information regarding Euro CHATS. Customer service hotlines provided by the settlement institution and the system operator are available to answer enquiries from participants.

The assessment concludes that Euro CHATS observes Core Principle II.

Core Principle III

The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

The focus of the assessment of this Core Principle is the clarity and comprehensiveness of the procedures for the management of credit risks and liquidity risks. The procedures should specify clearly the roles and responsibilities of the system operator and the participants regarding the incentives and measurements to manage the risks contained.

The procedures for the management of the credit risk are clear. The settlement institution is exposed to credit risks in Euro CHATS through the provision of overdraft or Repo facilities to the direct participants. The overdraft facility does not require collateral while a Repo is a collateralised facility. These liquidity facilities are based on commercial terms agreed between the settlement institution and the respective direct participant. To manage and control the credit exposure, each direct participant is granted a limit to cap its maximum exposure of the amount for the overdraft and the Repo. Both real-time online information and day-end reports are available to facilitate the monitoring of credit risk by the settlement institution and the direct participants. For risk management, the collateralised arrangement is preferable to the non-collateralised one. There is virtually no system-inherent credit risk for participants as payments are settled on an RTGS and PvP basis.

Euro CHATS has a number of built-in features to facilitate the management of liquidity risk in the system.

Apart from the overdraft and Repo facilities, direct participants' liquidity management is also enhanced by features such as real-time balance enquiry, payment queue management, payment gridlock detector, limit setting and liquidity optimiser. The settlement institution has also adopted a number of measures to facilitate liquidity management in Euro CHATS, such as the throughput guideline⁸ and pay-in pay-out arrangements.

The availability of euro liquidity is important. A failure to provide for this will derail the operation of Euro CHATS. The settlement institution has therefore taken a number of measures to secure its euro funding and to minimise the funding risk.

The settlement institution has committed to providing ample euro liquidity in the system under the franchise agreement with the HKMA. Since its inception in April 2003, Euro CHATS has not encountered problems in the provision of liquidity. The settlement institution, through the SCB's London office, is able to access the payment systems in Europe to pay or receive euro for the pay-in and pay-out activities, or for its funding management to facilitate the operation of Euro CHATS. The settlement institution also has pre-arrangements in Europe to secure its euro funding.

The assessment concludes that Euro CHATS broadly observes Core Principle III. However, measures to further strengthen the management of the risks involved can be considered, such as encouraging the use of Repo facilities rather than non-collateralised overdrafts.

Core Principle IV

The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.

The assessment of this Core Principle focused on the distinction of different stages of the processing of a payment instruction, for instance, its submission, validation, irrevocability and finality, and the information that is provided to participants on the status of the payment.

Transactions settled through Euro CHATS enjoy settlement finality under the CSSO.

Euro CHATS was designated under the CSSO on 26 November 2004 and a certificate of settlement finality was issued the same day. Therefore, all transactions settled through Euro CHATS are irrevocable and final, and enjoy statutory backing from 26 November 2004. The Rules and the Procedures also stipulate that all payments made by or to each direct participant, which are effected through Euro CHATS, shall be settled by debiting or crediting the settlement account of such direct participant and, once debited or credited to such settlement account, such payments shall be deemed made, completed, irrevocable and final.

The different stages of the processing of a payment instruction through Euro CHATS are clearly stipulated in the relevant documents.

The system is operated on an RTGS basis, with all transactions settled in real time and before the system closes for the day. Otherwise the payment will be cancelled by the system. All payments processed through Euro CHATS will go through a validation process. The payment processing cycle, including the conditions and procedures for validation, the settlement procedures, operating and cut-off schedules are properly documented in the Rules and the Procedures. The documents state clearly the circumstances and the stages when a payment is deemed made, completed, irrevocable and final.

The assessment concludes that Euro CHATS observes Core Principle IV.

⁸ The purpose of the throughput guideline is to encourage all participants of the system to make payments in an orderly manner throughout the day.

Core Principle V

A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

Core Principle V does not apply to Euro CHATS as it is an RTGS system and does not involve multilateral netting of payment instructions.

Core Principle VI

Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.

The observance of this Core Principle was verified with a particular focus on the provider of the settlement asset, possible credit and liquidity risks inherent in the respective asset and the arrangement in case of failure.

The assets used for settlement in Euro CHATS are claims on commercial bank money. The HKMA observes international practice and adopted a private sector solution in appointing the SCB as the settlement institution. All payment instructions effected through Euro CHATS are settled across the books of the SCB in the form of commercial bank money.

The settlement institution has committed to provide sufficient euro liquidity to Euro CHATS. The settlement institution has taken appropriate steps to secure its access to euro funding. A number of risk management measures have been introduced to manage the possible financial risk incurred by the SCB as the settlement institution. However, there is no specific documentation mentioning the handling procedures or the steps to be taken to protect the direct participants in the event of the failure of the

settlement institution. Nevertheless, measures are in place to mitigate the risk of a settlement-institution failure. These measures are set out below.

Appropriate measures are available for the management of credit risk and liquidity in the system.

The management and control of the credit risk is provided through limit-setting to confine exposure to participants in the system. Real-time information is also available to help monitor the use of credit facilities extended by the settlement institution. The credit risk of a direct participant exposed to the settlement institution, in the form of the account balance maintained in the settlement account, is managed through the monitoring of account positions through online system information and day-end reports. More importantly, a direct participant can make use of the pay-in and pay-out arrangements to better manage the euro funding. In managing funds in the settlement account, a direct participant can choose to transfer the balance in its settlement account with Euro CHATS to accounts of its correspondents in Europe at the end of the day to eliminate its exposure to the settlement institution.

In managing liquidity risk, the settlement institution provides ample liquidity to the system through the provision of overdraft and Repo facilities to the direct participants. The direct participants are expected to comply with the throughput guideline to ensure their payments are made and settled promptly, and can make use of the pay-in and pay-out arrangements to better manage their euro funding.

The system has a number of built-in features, including real-time payment information, payment queue management, payment gridlock detector and liquidity optimiser, to facilitate liquidity management and to help minimise risk exposures in Euro CHATS.

It is considered the settlement asset used, which is commercial money, is of no credit risk and of little liquidity risk, given the measures introduced, the liquidity arrangements, the flexibility to transfer funds in the settlement account out of the system on the same day and the high standard of creditworthiness of the settlement institution.

The assessment concludes that Euro CHATS broadly observes Core Principle VI, although additional measures should be considered to minimise risks. The settlement institution is encouraged to study further steps to minimise risks.

Core Principle VII

The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.

The assessment of this Core Principle was mainly related to the existing security objective and relevant policy, the robustness of overall system security, operational reliability, the availability of sufficient well-trained staff and the establishment of business continuity arrangements (including contingency and crisis management procedures).

Proper objectives, procedures and controls are established to ensure system security and operational reliability of Euro CHATS. Relevant security objectives, policies and procedures aim at ensuring security measures and features, for confidentiality, integrity, authentication, non-repudiation and availability of information, as well as auditability of processes and procedures that meet industry practices, have been implemented for the computer systems and related networks of Euro CHATS. The computer systems and the networks are operated according to the established objectives and policies. The security objectives and policies are reviewed periodically. Information technology audit and an operation audit by independent external parties are conducted regularly. Each direct participant is also required to have appropriate security measures and controls for processing euro payments. The system has sufficient capacity to maintain operational reliability. System availability since the implementation of Euro CHATS in April 2003 has always exceeded 99.9%.

The business continuity and contingency operations arrangements of Euro CHATS are comprehensive. The system's business continuity plan covers a wide spectrum of areas, such as hardware, software, system network, staffing, and data replication. Procedures for crisis management and information dissemination, the setting up of a command centre to manage recovery, and the procedures to deal with emergency response and external liaison are also covered. For operational continuity, in addition to on-site backup arrangements at the primary site, the system operator has set up a hot backup site and a standby arrangement to ascertain timely resumption of services and a continuation of services if the primary production site fails to operate. The primary site and back-up sites are located in different areas to mitigate the effects of power and telecommunications outages. The backup arrangements are reviewed periodically in the light of changing conditions. Split team arrangements and manpower contingency measures are also in place to ensure sufficient human resources in all situations. Regular drills are performed with participants to ensure the contingency measures are appropriate and effective. The business continuity and contingency arrangements of Euro CHATS are properly documented, updated, and regularly tested.

The assessment concludes that Euro CHATS observes Core Principle VII.

Core Principle VIII

The system should provide a means of making payments, which is practical for its users and efficient for the economy.

When assessing the compliance of this Core Principle, attention was paid to the efficiency of the system in the provision of services to balance between costs and benefits, and its practicality.

The payment services provided by Euro CHATS in general meet the demands of the industry.

The system was established to facilitate the efficient settlement of euro transactions within Asian business

hours. The services provided take into account the needs of users, and improvements are frequently made to cater for new developments in the industry.

Euro CHATS is considered convenient and user-friendly to participants. The design of the system is similar to that of the HKD CHATS and the USD CHATS in Hong Kong. The three payment systems are operated by the same system operator and run on the same technical platform. Payment instructions for the three systems can be processed simultaneously on three separate sets of similar software, which is installed in the same user terminal. The operating hours of the three CHATS systems are synchronised. The operating procedures of the three systems are generally similar with a few exceptions to take into account the unique characteristics of each system. On pricing policy, Euro CHATS adopts a user-pays principle. Service fees charged by the system operator are set to recover the actual costs incurred in providing the services. The tariff is determined by the settlement institution. The participants of Euro CHATS are aware of the pricing methodology and the fee schedule.

The assessment concludes that Euro CHATS observes Core Principle VIII.

Core Principle IX

The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

The assessment of this Core Principle concentrated on the transparency and fairness of access and exit criteria to the system, and the monitoring of the fulfilment of membership criteria.

The access and exit criteria for Euro CHATS are laid down in the relevant legal documents which are transparent to system participants.

Access to the system is voluntary. The system adopts a two-tier membership structure in which financial institutions can join as either direct participants or Indirect CHATS User. The conditions

and requirements for banks in Hong Kong to access to the system are clearly documented. Other institutions (both local and overseas) may become direct participants or Indirect CHATS Users subject to approval by the settlement institution and the MA. Nevertheless, it is considered that more specific access requirements for joining and exiting the system for non-banks should be provided. Arrangements are also in place to facilitate exit from Euro CHATS in an orderly manner.

The monitoring of fulfilment of access criteria by the existing participants is effective. The membership of Euro CHATS is administered by the settlement institution and the HKMA with reference to the established rules and procedures. The system operator is responsible for the technical setup and system maintenance. The settlement institution and the system operator continually monitor the fulfilment of access criteria of the existing participants.

The assessment concludes that Euro CHATS broadly observes Core Principle IX. More precise requirements for joining the system by non-bank institutions can be considered.

Core Principle X

The system's governance arrangements should be effective, accountable and transparent.

Under this Core Principle, the main aspects assessed include the transparency of the system organisation and the decision-making procedures, the clarity of the roles and responsibilities of each of the involved parties, and the relevance of the service provided to users.

Euro CHATS has established a clear governing structure. The governing structure for Euro CHATS involves the SCB as the settlement institution, the HKICL as the system operator, and the HKMA as the system facilitator of Euro CHATS and as payment system overseer. To avoid conflict of interest, these

two different roles of the HKMA are performed by two separate teams in the organisation. The roles and responsibilities of each party in the governing structure in the decision-making process, the accountability of the management for the performance of the system and other matters related to Euro CHATS, are clearly specified in relevant documents. Independent audits on the operations of the system operator and the functions of the settlement institution are also conducted. Proper approval is required from all relevant parties on important decisions related to Euro CHATS to ensure that the interests or concerns of the parties concerned are addressed properly.

Information regarding Euro CHATS is transparent to the public or relevant users through various channels. The HKMA publishes information related to Euro CHATS through its annual reports, quarterly bulletins or press releases. Information regarding the payment services of Euro CHATS is available on the website of the settlement institution and the system operator. The system

operator disseminates operational information through various channels, including the Rules and the Procedures, and circulars and letters issued by the system operator.

The assessment concludes that Euro CHATS observes Core Principle X.

Conclusion

Euro CHATS has achieved a high degree of compliance with the Core Principles. The table below is a summary of the magnitude of compliance of Euro CHATS with the Core Principles.

As part of its continuing oversight of the system, the HKMA will encourage Euro CHATS to comply with internationally recognised standards. An assessment of the system against the Core Principles will be performed once every two years. Through the 2006 exercise, the parties involved may consider whether further improvements are needed to Euro CHATS to ensure the system is in line with international best practices.

Compliance of Euro CHATS with the Core Principles

Core Principle	Observed	Broadly observed	Partly observed	Not observed	Not applicable
I	✓				
II	✓				
III		✓			
IV	✓				
V					✓
VI		✓			
VII	✓				
VIII	✓				
IX		✓			
X	✓				

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